YesPDF Enterprise

Minimum System Requirements

Version: 1.0

Date: 03 February 2026

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This document summarizes minimum and recommended system requirements for YesPDF Enterprise across common deployment scenarios.

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Quick Summary

Sizing depends more on **concurrent users** and workload type (Light / Conversion / OCR) than the total number of registered users.

- Single-server guideline: up to ~30 concurrent users is recommended per instance (assuming balanced queue limits and typical document sizes).

The table below provides a fast reference for the most common scenarios.

Scenario	Total	Concurrent	CPU	RAM	Disk	Servers
Small Office	10	3	4 core	8 GB	100 GB	1
Medium Ofis	50	10	8 core	16-32 GB	250 GB	1
Enterprise	100	20	16 core	32-64 GB	500 GB	1
Large Enterprise	500	50	16 core x2-3	64 GB x2-3	500 GB x2-3	2-3 + LB
Enterprise	1000+	100+	16 core x4-6	64 GB x4-6	1 TB x4-6	4-6 + LB + HA

Note: Heavy OCR or intensive Word/Excel conversion increases RAM and disk I/O requirements significantly.

1. Overview

This document defines the minimum system requirements for YesPDF Enterprise across different user scenarios. Requirements are based on real load tests and performance analysis.

Key Concepts

Term	Description
Total Users	Number of registered users in the system
Concurrent Users	Number of users actively processing at the same time
Operation Type	Light (rotate, compress) / Medium (convert) / Heavy (OCR)
Think Time	User wait time between operations

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2. User Scenarios

Scenario 1: Small Office

10 Total Users / 3 Concurrent

Typical usage: Small office, departmental PDF operations

Component	Minimum	Recommended
CPU	4 core	4 core
RAM	8 GB	8 GB
Disk	SSD 100 GB	SSD 128 GB
Network	100 Mbps	1 Gbps
OS	Windows Server 2019	Windows Server 2022

Queue Settings:

```
QUEUE_MAX_WORKERS: 8
QUEUE_MAX_OCR: 2
QUEUE_MAX_CONVERT: 4
QUEUE_MAX_SIMPLE: 8
```

Expected Performance:

- Light operations: 1–3 seconds
- Conversion operations: 5–10 seconds
- OCR operations: 20–40 seconds
- Success rate: >95%

Scenario 2: Mid-size Office

50 Total Users / 10 Concurrent

Typical usage: Mid-size company, multiple departments

Component	Minimum	Recommended
CPU	8 core	8 core
RAM	16 GB	32 GB
Disk	SSD 250 GB	SSD 500 GB
Network	1 Gbps	1 Gbps
OS	Windows Server 2019	Windows Server 2022

Queue Settings:

```
QUEUE_MAX_WORKERS: 16
QUEUE_MAX_OCR: 4
QUEUE_MAX_CONVERT: 8
QUEUE_MAX_SIMPLE: 16
```

Expected Performance:

- Light operations: 1–5 seconds
- Conversion operations: 5–15 seconds
- OCR operations: 30–60 seconds
- Success rate: >90%

Important: If OCR usage is heavy, 32 GB RAM is recommended.

Scenario 3: Enterprise (Single Server)

100 Total Users / 20 Concurrent

Typical usage: Enterprise, single location

Component	Minimum	Recommended
CPU	16 core	16 core
RAM	32 GB	64 GB
Disk	SSD 500 GB	NVMe SSD 1 TB
Network	1 Gbps	10 Gbps
OS	Windows Server 2022	Windows Server 2022

Queue Settings:

```
QUEUE_MAX_WORKERS: 32
QUEUE_MAX_OCR: 8
QUEUE_MAX_CONVERT: 16
QUEUE_MAX_SIMPLE: 32
```

Expected Performance:

- Light operations: 2–8 seconds
- Conversion operations: 10–30 seconds

- OCR operations: 30–90 seconds
- Success rate: >85%

Note: Queue delays may occur during peak hours.

Scenario 4: Large Enterprise (Multi-Server)

500 Total Users / 50 Concurrent

Typical usage: Large enterprise, multiple locations

Architecture: 2–3 Servers + Load Balancer

Application Servers (x2–3):

Component	Per server
CPU	16 core
RAM	64 GB
Disk	NVMe SSD 500 GB
Network	10 Gbps
OS	Windows Server 2022

Load Balancer:

Component	Requirement
Type	Nginx / HAProxy / Windows NLB
CPU	4 core
RAM	8 GB
Algorithm	Least Connections

Database (Separate Server - Optional):

Component	Requirement
CPU	8 core
RAM	32 GB
Disk	NVMe SSD 500 GB
DB	PostgreSQL 15+

Queue Settings Per Server:

```
QUEUE_MAX_WORKERS: 24
QUEUE_MAX_OCR: 6
QUEUE_MAX_CONVERT: 12
QUEUE_MAX_SIMPLE: 24
```

Expected Performance:

- Light operations: 2–10 seconds
- Conversion operations: 10–45 seconds

- OCR operations: 30–120 seconds
- Success rate: >90% (LB ile)

Scenario 5: Enterprise (High Availability)

1000+ Toplam Kullanici / 100+ Eszamanli

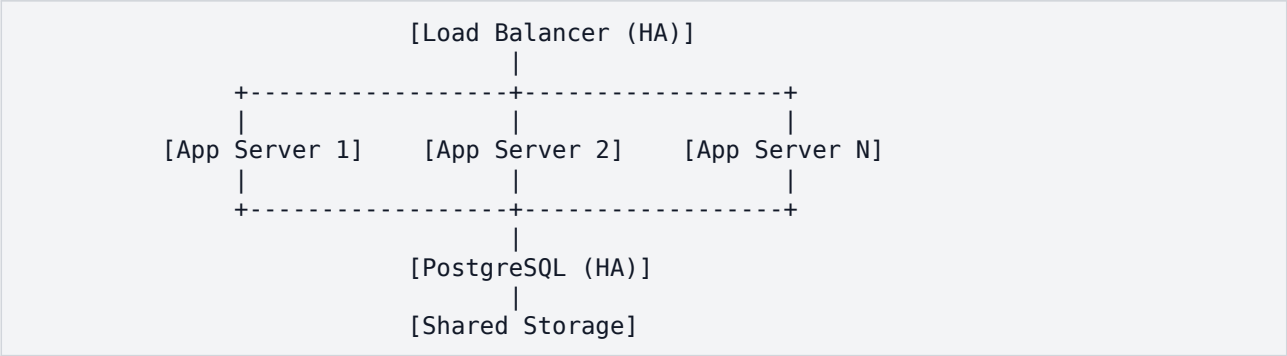
Typical usage: Very large enterprise, 24/7 operation

Architecture: Microservices + Kubernetes (Optional)

Minimum Infrastructure:

Component	Count	Specifications
Application Servers	4-6	16 core, 64 GB RAM
Load Balancer	2 (HA)	Active-Passive
Database	2 (HA)	Primary-Replica
File Storage	1	NAS/SAN, 5+ TB
Redis Cache	2 (HA)	Session/Queue yonetimi

Recommended Architecture:



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3. Resource Usage by Operation Type

Light Operations (rotate, compress, split, merge, watermark)

Resource	Usage
CPU	Low (1-2 core)
RAM	Low (100-500 MB)
Disk I/O	Medium
Typical time	1-15 seconds

Conversion Operations (Word, Excel, HTML, Image)

Resource	Usage

CPU	Medium-High (2-4 core)
RAM	Medium (500 MB - 2 GB)
Disk I/O	High
Typical time	5-60 seconds

OCR Operations (Searchable PDF, Text Extract)

Resource	Usage
CPU	High (4-8 core)
RAM	High (1-4 GB)
Disk I/O	Medium
Typical time	20-120 seconds

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4. Scaling Guide

Vertical Scaling (Scale Up)

Increasing resources on a single server:

Concurrent	CPU	RAM	Disk
3-5	4 core	8 GB	SSD 100 GB
5–10	8 core	16 GB	SSD 250 GB
10-20	16 core	32 GB	SSD 500 GB
20-30	16 core	64 GB	NVMe 1 TB

Limit: A single server is recommended for up to ~30 concurrent users.

Horizontal Scaling (Scale Out)

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Concurrent	Servers	Per server
30-50	2	16 core, 32 GB
50-100	3-4	16 core, 64 GB
100-200	5-6	16 core, 64 GB
200+	6+	Microservices recommended

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5. Queue Sizing Formula

Recommended queue settings based on concurrent users:

```
QUEUE_MAX_WORKERS = Eszamanli_Kullanici * 1.5
QUEUE_MAX_OCR = Eszamanli_Kullanici * 0.3
QUEUE_MAX_CONVERT = Eszamanli_Kullanici * 0.6
QUEUE_MAX_SIMPLE = Eszamanli_Kullanici * 1.5
```

Example (20 concurrent):

```
QUEUE_MAX_WORKERS: 30  # 20 * 1.5
QUEUE_MAX_OCR: 6       # 20 * 0.3
QUEUE_MAX_CONVERT: 12  # 20 * 0.6
QUEUE_MAX_SIMPLE: 30   # 20 * 1.5
```

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6. Network Requirements

Bandwidth Estimate

Islem	Mediumlama Boyut	Bant Genisligi (10 concurrent)
Upload	2-5 MB	20-50 Mbps
Download	2–10 MB	20-100 Mbps
Total	-	**50–150 Mbps**

Ports

Port	Service	Direction
8000	YesPDF API	Inbound
443	HTTPS (Reverse Proxy)	Inbound
5432	PostgreSQL	Internal
6379	Redis (opsiyonel)	Internal

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7. Storage Requirements

Disk Sizing

```
Required_Space = (User_Count * Avg_Documents * Avg_Document_Size * 2)
```

Example (100 users, 50 docs/user, 2 MB/doc):

```
100 * 50 * 2 MB * 2 = 20 GB (documents)
+ 10 GB (system)
+ 20 GB (temporary files)
+ 10 GB (logs)
= ~60 GB minimum
```

Disk Performance

Scenario	Minimum IOPS	Recommended
Small (10 users)	1,000	SSD
Medium (50 user)	5,000	SSD
Large (100+ users)	10,000+	NVMe SSD

8. Monitoring & Alerts

Key Metrics

Metric	Warning	Critical
CPU utilization	>70%	>90%
RAM utilization	>75%	>90%
Disk utilization	>80%	>95%
Queue length	>50	>100
Response time (p95)	>30s	>60s
Error rate	>5%	>10%

Recommended Monitoring Tools

- Windows Performance Monitor
- Prometheus + Grafana
- Application Insights
- ELK Stack (logs icin)

9. Summary Table

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10. Contact

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This document is based on YesPDF LoadLab tests and real-world performance observations. For special requirements, please contact YES BILIŞIM.